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10/757,528

01/15/2004

Ping Pan

4450-0425P

4575

2292

7590

09/10/2004

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EXAMINER

LEVITAN, DMITRY

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/757,528

**Applicant(s)**

PAN ET AL.

**Examiner**

Dmitry Levitan

**Art Unit**

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-29 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-17 is/are rejected.
- 7) ☒ Claim(s) 7 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Specification***

1. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

2. The disclosure is objected to because of the following informalities: typographical error on page 20, “edge nodes D and H”, instead of edge nodes C and H.

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: link access procedure and resilient packet ring are not supported by the specification.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 8 and 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2662

Claim 17 limitations of the packets in the customer data flow is unclear, because it is not understood if, the packets comprise all limitations of the claim "gigabit Ethernet, link access procedure, Ethernet over SONET etc." or one of them.

Claim 8 recites the limitation "the optical signal transport frame" in line 12. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao (draft-ietf-pwe3-requirements-03.txt, June 2002).

Xiao substantially teaches the limitations of claim 1:

A method of transporting packet data and command messages through a network connection between edge nodes (PWE3 reference model 1.1.), comprising:

Establishing a pseudo-wire directly over the connection between edge nodes (Pseudo Wire on Fig 1 and Terminology 1.2.);

Tunneling the packet data within established pseudo-wire over the connection between edge nodes (PSN Tunnel on Fig. 1 and Terminology 1.2.);

Tunneling command messages between the edge nodes (using tunneling sessions in setup and teardown of Pseudo Wires 3.1.).

draft-ietf-pwe3-requirements-03.txt does not teach the network connection as optical and transporting the command messages within the same optical connection.

Official notice is taken that using optical connection and the same optical connection for data and commands is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add transporting the command messages within the same optical connection to the system of Xiao to utilize existing optical connections and conserve the system bandwidth.

Regarding claim 5, Xiao teaches negotiating an encapsulating label for the packet data to be transmitted between the edge nodes and utilizing the label for the packet data (both endpoints must agree on methods for encapsulating PDUs/label 3.1. and inherently utilize the label, because utilizing known encapsulation labels is essential for data packet tunneling).

Regarding claim 6, Xiao teaches associating the tunneled packet data with a corresponding tunneled command message (inherently part of the system because the command, for example, setup message is associated with establishing the tunneled packet data communication – PSN tunnel on Fig. 1 and 1.2.).

8. Claims 8-12, 16 and 17 are rejected (as understood) under 35 U.S.C. 103(a) as being unpatentable over Xiao.

Regarding claims 8-12, Xiao substantially teaches the limitations of claims 8-12.

Art Unit: 2662

A method of transporting a customer data flow (Fig. 1) including a sequence of associated data packets (delivering packets in order 2.2.) over a communication network (Fig. 1 and 1.1.), comprising:

Terminating client frames in the flow holding the sequence of data packets (dropping L2 or L1 header information 2.1.);

Appending an encapsulation label to the packets whose client frames have been terminated (encapsulation 2.1.);

Originating a connection between edge nodes (PSN tunnel on Fig. 1);

Transmitting the data packets with the appended encapsulation labels over the communication connection using the connection signal transport framing (inherently part of the system, because using the connection signal transport framing is essential for the transmission); and

Tunneling command messages associated with the customer data flow (using tunneling sessions in setup and teardown of Pseudo Wires 3.1.).

Xiao does not teach using an optical connection and transmitting the command messages and data within the same optical signal transport frames.

Official notice is taken that using optical connection SONET/SDH and the same optical connection frames for data and commands is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add optical connection and using the same optical connection frames for data and commands to the system of Xiao to utilize existing optical connections and conserve the system bandwidth.

Regarding claim 16, Xiao teaches data packets as layer-2 packets (1.1.).

Art Unit: 2662

Regarding claim 17, Draft-ietf-pwe3-requirements-03.txt teaches data packets as Ethernet, ATM, Frame Relay packets over SONET (1.1.).

Regarding claim 16, Xiao teaches encapsulating the data packet plus appended encapsulating label in a packet over SONET frame (inherently part of the system, because encapsulating a packet in a SONET frame is essential for using SONET transport mechanism).

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao. Xiao substantially teaches the limitations of claims 8 and 11 (see above) including terminating the optical connection and recovering the data packets.

Xiao does not teach determining an intended physical port to send out the extracted data packet.

Official notice is taken that determining an intended physical port is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine an intended physical port in the system of Xiao to simplify the transmission of the received data packet.

10. Claims 2, 3, 4, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao in view of Gregg (US 6,721,335).

Xiao substantially teaches the limitations of claims 1 and 8 (see above):

Art Unit: 2662

Including encapsulating label for the command messages to be transmitted between the edge nodes (inherently part of the system, because utilizing known encapsulation labels is essential for data packet tunneling).

Xiao does not teach using encapsulation label identifying a tunneled data as a command message.

Gregg teaches using labels identifying the content of the packet as a command message or data, segregating the command message (step 1001 in Fig. 10 and 19:6-45) and sending the command message to a switch controller of the receiving node (inherently part of the system, because Gregg teaches transmitting commands between nodes in switching network, so each node should have a switch controller).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use labels identifying the content of the packet as a command message or data of Gregg in the system of Xiao to simplify and increase the speed of the command messages identification.

In addition, regarding claim 15, Xiao teaches removing the encapsulation frame from the data packets and transmitting them to an intended destination based on the removed label (encapsulation and reconstruction in 1.1.).

***Allowable Subject Matter***

11. Claims 19-29 are allowed.



Art Unit: 2662

12. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claim 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### *Conclusion*

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Draft-ietf-pwe3-control-protocol-00.txt IETF August 2002

Loehdorf US006094437A Layer two tunneling protocol merging and management.

Luciani US006614791B1 System, device and method for supporting virtual private networks.

Langille US 20020097730A1 Network device virtual interface.

Sodder US 20040081203A1 Apparatus and method for a virtual LAN.

Chuah US006654808B1 Providing QoS in layer two tunneling.

Barrack US 20040066779A1 Method and implementation for context switchover.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is 703-305-4384. The examiner can normally be reached on 8:30 to 4:30.


Art Unit: 2662

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan  
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08/16/04



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